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Johannaber

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(54) **INTRAMEDULLARY RESECTION GUIDE AND METHODS**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,726,974 B2 * 6/2010 Shah H05B 33/0803 439/40
8,021,368 B2 * 9/2011 Haines A61B 17/15 606/82

(Continued)

FOREIGN PATENT DOCUMENTS

EP 1444957 A1 8/2004
EP 2964110 B1 12/2016

(Continued)

OTHER PUBLICATIONS

"International Application Serial No. PCT/US2014/018900, International Search Report dated May 23, 2014", 5 gs.

(Continued)

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(57) **ABSTRACT**

A bone cut positioning system and associated method are disclosed. The bone cut positioning system can include a positioning assembly. The positioning assembly can include a femoral attachment member configured to be fixed to a distal end of a femur, a light emitter mounting member configured to receive a light emitter, and a channel configured to receive a depth selector slide. Further, the positioning assembly can include a varus-valgus adjustment member configured to adjust a position of the positioning assembly relative to the femur to achieve a desired varus-valgus angle and a guide member removably coupled to the depth selector slide and configured to extend from the depth selector slide.

19 Claims, 10 Drawing Sheets